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ABSTRACT

"Tax Whys: Understanding Taxes" is a series of six video/film instructional programs being produced for the Internal Revenue Service to provide middle school students with an understanding of the reasons for and effects of taxation. This report details both student and teacher evaluations of one of the first programs to be scripted: "Taxes Influence Behavior." The program was evaluated by 470 students and 12 teachers in a total of 5 schools. A discussion of the sample and methodology is followed by findings from the student survey on attention to the program, interest, story believability, character perceptions, storyline comprehension, and program objectives. Findings from the teacher survey provide data on such areas as appeal, curriculum fit, objectives, teacher follow-up, and use. It was concluded that the program was appealing to both students and teachers. However, given the heavy content load of each of the individual scenes, teacher follow-up to the program will be important if students are to comprehend the effects of taxes on the various decisions made in the program. Teacher follow-up will also be critical to reinforce the program's instructional objectives. An attention profile form, the student and teacher questionnaires, and student discussion questions are appended. (THC)

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Research Report

NUMBER 91

FORMATIVE EVALUATION OF "TAXES INFLUENCE BEHAVIOR" (LESSON #2) FROM TAX WHYS: UNDERSTANDING TAXES

IR011418

agency for instructional television
box a, bloomington, indiana 47402

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INTRODUCTION

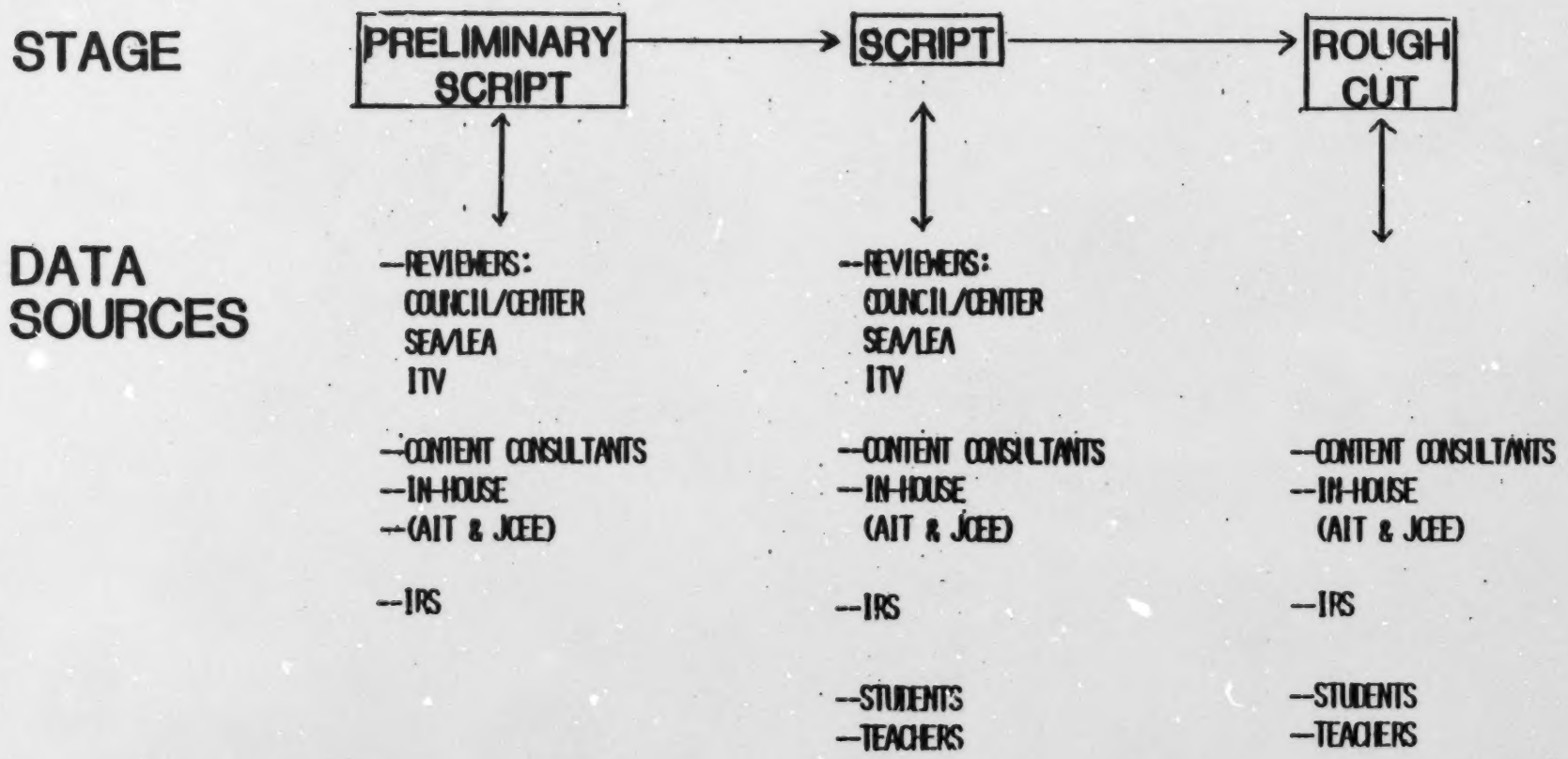
TAX WHYS: UNDERSTANDING TAXES is a series of six video/film programs being produced for the Internal Revenue Service by the Agency for Instructional Television and the Joint Council on Economic Education. Fifty state education and telecommunications agencies, the Washington, D.C. schools, the Department of Defense Dependents Schools, as well as 51 Councils on Economic Education are collaborating with AIT and JCEE on the project. The preliminary instructional design for the series was developed in September of 1983 and widely distributed and reviewed in October 1983. After this design review process, scripting for the series began.

One of the first programs to be scripted was program #2, "Taxes Influence Behavior." The preliminary script was sent to the field for review in November 1983. In response to a variety of concerns that surfaced from these reviews, a second draft script was developed and again reviewed by the field in December 1983. This draft script was also evaluated in classrooms with students and teachers. After this lengthy evaluation process, the script was submitted for production. A chart that summarizes the evaluation process for this program appears on page 1a.

The rough-cut program was ready for classroom evaluation in January 1984. This report details the classroom evaluation of the rough-cut for program #2, "Taxes Influence Behavior."

TAX WHYS: Understanding Taxes

Formative Evaluation Process



1a

SAMPLE

The program was evaluated with a total of 470 students and 12 teachers in five schools. The characteristics of the student sample are summarized in the chart on page 2a.

The limitations of the sample include:

1) It is primarily an urban sample, with no significant representation of rural students.

2) It is skewed towards black students (61%).

The strengths of the sample are:

1) It includes a range of grade levels.

2) It includes a range of student ability levels.

3) It includes a range of types of schools.

METHODOLOGY

Each classroom evaluation began with an introduction by the evaluator. The purpose of this introduction was twofold: to orient the students to the task, and to make them feel comfortable with the evaluator so that open and honest responses during discussions were received. Students were told that they would view a program, complete a questionnaire, and participate in a group discussion. They were told that the program was a "rough-cut" program and some of the characteristics of a rough-cut were explained. They were told that they would be "critics" of the progam and were encouraged to be honest in their responses.

Following the introduction, students viewed the program. In a sub-sample of 10 classes in Louisville, Kentucky and Washington, D.C., the AIT attention program was used to code attention to the screen. This method consists of two evaluators

TAX WHYS - Program #2

DEMOGRAPHICS OF SAMPLE

N 470

SITES

- Louisville, Kentucky (2 schools)
- Washington, D.C. (1 school)
- Prince George's County, Maryland (2 schools)

SEX

- Male 47%
- Female 53%

GRADE

- 9th 32%
- 10th 15%
- 11th 33%
- 12th 20%

RACE

- Black 61%
- White 38%
- Other 1%

ABILITY LEVEL (estimated by teacher

- Above average 20%
- Average 61%
- Below average 19%

2a

each observing two different groups of five students. Every 20 seconds, the observer notes the number of students, from the group of five, who have their eyes on the screen. The coding sheet that was used for this activity appears in Appendix A. These raw numbers are then converted into percentages and graphically depicted for the entire program. This method permits a scene-by-scene analysis of students' attention to the program (see graph on page 3a).

Following viewing, students completed a questionnaire (a compiled student questionnaire appears in Appendix B). Whatever classroom time was left (usually 10-15 minutes), was used to discuss the program with students (a list of the discussion questions used appears in Appendix C).

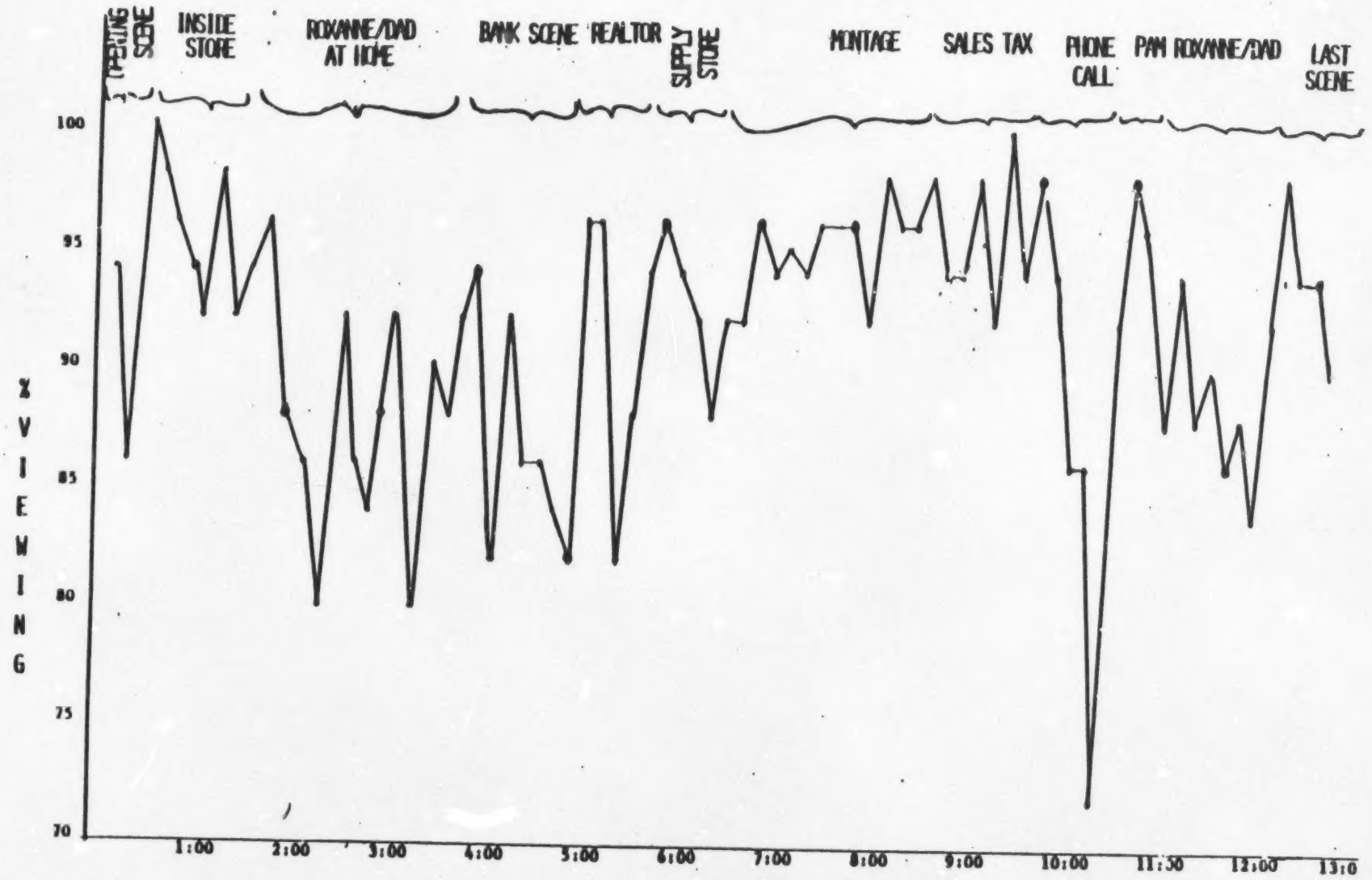
As students were completing the questionnaires, the teachers completed a teacher questionnaire (a compiled copy appears in Appendix D) and a classroom status form (a compiled copy appears in Appendix E). The teacher questionnaire was designed to get teachers' reactions to the program. The classroom status form was used by the teacher to describe the kinds of students in the class.

Thus, the evaluaton used a combination of quantitative and qualitative methods to assess both student and teacher reactions to the program.

STUDENT FINDINGS

Attention

The attention graph on page 3a graphically depicts


OPENING SCENE
INSIDE STORE
ROXANNE/DAD AT HOME
BANK SCENE REALTOR
SUPPLY STORE
MONTAGE
SALES TAX
PHONE CALL
PAM ROXANNE/DAD
LAST SCENE
% VIEWING
100
95
90
85
80
75
70
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:30
12:00
13:0
MINUTES

3a

students' attention to the screen. Although there were ebbs and flows from scene to scene, throughout the entire program the majority of the students were attentive to the screen. These data are positive, and compare very favorably with the many times this technique has been used in the past with other AIT series. Overall, the data indicate that the program has the ability to capture and maintain student attention.

Interest

In addition to the attention profile, students were asked on the questionnaire if they thought the program was interesting. The majority of students (85%) indicated they thought the program was very (22%), or sort of (63%), interesting. Using a chi-square comparison, there were no statistically significant differences on this item by sex or by grade level. These self-report data are consistent with data gleaned from the attention profile: most students were interested in the program. Discussion data even further reinforced this concluson.

Story Believability

Almost all students (91%) indicated the program was either very (45%) or sort of (46%) believable. There were no statistically significant differences on this item by sex or by grade level.

Character Perceptions

Most students (79%) indicated Roxanne was a realistic teenager. They also perceived her as likeable (89%), believable

(76%), insecure (49%), and smart (90%). In discussions, those who indicated she was insecure said it was because "she was so hung up on getting a car to please her friend."

Most students (81%) perceived Mr. Whittaker as a realistic parent. They also perceived him as likeable (93%), believable (79%), competent (85%), and smart (93%).

Interestingly, half the students (50%) indicated the way Roxanne and her father interacted was not TYPICAL of the way most teens interact with their fathers. In discussions, students said fathers "don't usually talk to their daughters about taxes that much."

There were no statistically significant differences by grade or sex on any of the character perception items.

Storyline Comprehension

Given the relatively large number of content-laden scenes used to illustrate the instructional messages in this program, quantitative assessment of storyline comprehension proved somewhat difficult. From the questionnaire data, most students (77%) realized that "tax deductions usually reduce the amount of money an individual or a business must pay for taxes." Fewer students (59%), however, realized that a tax credit usually reduces the amount of tax owed more than a tax deduction. These two points were overall content messages depicted in several of the program's scenes. Each scene, however, contained very specific content messages related to the program's general theme of "taxes influence behavior." These specific aspects of storyline comprehension were examined primarily through student discusions.

In virtually every class, students were able to recall the situations from the program in which tax considerations influenced a decision. However, students did not have a thorough understanding of how tax considerations affected each decision. These situations, and students interpretations of them, included:

1) Roxanne's decision to purchase domestic perfume instead of imported perfume "because the import tax made it (imported) more expensive"

2) Mr. Whittaker's decision to locate the bakery in a redevelopment zone. Most students realized the local government provided a tax abatement to encourage business to locate in that area. However, some students seemed slightly confused about how and why a redevelopment zone was affected by tax considerations. One ninth-grade youngster referred to it as a "reproductive zone." The only noticeable reaction to the comment was supressed chuckles by the teacher and evaluator.

3) Mr. Whittaker's decision about which stove to buy. Students were confused about how taxes affected this decision. Some thought it was because the older model was heavily taxed, while others thought it was because the new model included a tax credit.

4) The teens decision to purchase only ten doughnuts instead of 12. Students realized it was because they had failed to consider the cost of the sales tax. A surprisingly consistent number of students said "a clerk would let you off for a quarter." (An examination of the attention graph on page __ indicates this scene was one of

the most attention-grabbing scenes of the program, probably because it showed target-agers involved in a situation most student viewers could identify with.)

5) The phone conversation in which Mr. Whittaker is talking to the prospective employee, Lucy. Most students recalled only the babysitting example from this conversation, "she could get a tax credit for her babysitter." However, not a single student mentioned any of the other points being raised by Lucy or Mr. Whittaker about tax affects on employers and employees. A qualifier must be added here: the sound mix for the rough-cut was uneven during this scene. Nonetheless, the phone conversation carries a very heavy content load, much of which seemed to have been lost on these students.

6) The Whittaker's decision to purchase a car. Students realized this decision was influenced by tax deductions.

Thus, although students in each class were able to recall the situations in the program in which tax considerations affected a decision, they did not have a clear understanding of the details of each situation.

Program Objectives

On a true/false item, only about half the students (53%) responded "true" to the statement: Objective #1 - "Taxes on particular products DISCOURAGE certain activities, since peole can avoid the taxes by not buying or selling the products that are taxed."

On a true/false item the majority of students (72%)

responded true to the statement: Objective #2 - "Tax exemptions and deductions ENCOURAGE certain activities since people can decide to engage more in these activities to take advantage of the tax savings." Using a chi-square comparison, there was a statistically significant difference (.05 level) by grade level on this item, with 12th graders performing better than 9th graders. This was the only statistically significant difference by grade or sex for the entire evaluation.

Objective #2 (taxes ENCOURAGE certain activities) seemed to come through more strongly in the program than objective #1 (taxes DISCOURAGE certain activities). As we will soon see (page 9), teachers' ratings of the objectives were consistent with this finding.

Conclusions: Student Data

Thus, the program was interesting for most of these students and captured and maintained their attention. They found both the storyline and characters to be believable. Although they were able to recall the situations in the program in which tax considerations affectd the decisions that were made, they did not clearly understand the reasons for each decision. Finally, objective #2 seemed to come through more clearly than objective #1. All of this suggests that what the teacher does following the program will be crucial to the successful implementation of the program. With this in mind, let's now examine the reactions of the 12 teachers who viewed the program with their classes.

TEACHER FINDINGS

Appeal

Almost all the teachers (90%) indicated that they liked the program. Informal comments from teachers supported this finding.

Curriculum Fit

Almost all the teachers (90%) indicated that the lesson's topic (taxes influence behavior) fit within their curriculum area. Most of these teachers were social studies teachers (civics, social issues, and U.S. history). Interestingly, none of the teachers indicated that they currently cover the topic "in depth." These findings suggest that the lesson may address an unmet curriculum need.

Objectives

Objective #2 (taxes ENCOURAGE certain activities) was rated as "highly visible" by most of the teachers (64%). Objective #1 (taxes DISCOURAGE certain activities) was rated as "highly visible" by only about a third of the teachers (36%). These findings are consistent with the student findings: Objective #2 seems to come through more clearly than Objective #1.

Teacher Follow-up

Almost all the teachers (90%) indicated it would take a "great deal" of follow-up on their parts for their students to understand the concepts presented in the program. Almost all of the teachers (82%) felt that the program's key terms should be

defined in the guide. Over a third of the teachers (36%) indicated they would have to spend pre-program time either learning the concepts (18%) or reviewing the concepts (18%). Thus, although these teachers thought follow-up of the program would be crucial, these data suggest that the concepts presented in the lesson may constitute a learning experience for some teachers as well.

Use

The majority of these teachers (73%) indicated that they likely would use the program. Those who didn't, said it was because it didn't fit in their curriculum area(s).

CONCLUSIONS

Thus, both the teacher and student data were very consistent. The program is appealing to teachers and students. However, given the rather heavy content load of each of the individual scenes, teacher follow-up to the program will be important for students to comprehend the ramifications of taxes to the various decisions made in the program. Likewise, teacher follow-up will be critical to reinforce the program's instructional objectives, particularly objective #1 (taxes DISCOURAGE behavior). All of this suggests that the teacher's guide will be a very important component of the overall lesson.

APPENDIX A

ATTENTION PROFILE FORM

		OBSERVER #1			OBSERVER #2
:10		Start his own business. . .you see	:20		come true. . .and part of
:30		inside shot of store. . .are	:40		a bakery' How great!
:50		after school and on Saturday	:60		split the cost, I know, I know
1:10		present for my boyfriend	1:20		anything that's less expensive
1:30		that's not imported. . .if it's	1:40		this'll due. Thank you.
1:50		. . .I've done a lot	2:00		or the equipment. I don't know
2:10		get a loan from bank	2:20		from our business income
2:30		on our home mortgage	2:40		Yes, that's true. There will
2:50		part of running your own business. .	3:00		be my own man. . .Work
3:10		work when you can. . .	3:20		I was counting on getting my
3:30		and as a partner	3:40		all your life. It's just that
3:50		but trust me	4:00		I'm sure there isn't Mr. Whit.
4:10		the location of your	4:20		of city are designated as redev.
4:30		business expense, won't it?	4:40		and whether it's eligible
4:50		tax bill reduced by	5:00		more than a tax deduction. . .Ric
5:10		It's got a good size	5:20		this area is a big city
5:30		new jobs into community	5:40		a look inside. . .
5:50		outside supply store (silence)	6:00		looks expensive. . .It is
6:10		without pollution controls	6:20		over here (steps)
6:30		it sure will. Our company	6:40		on my car. . .I'm only
6:50		music (first 3 notes)	7:00		montage, head in oven. . .
7:10		girl cleaning shelf	7:20		school books (calculus)
7:30		girl on phone	7:40		dad rubbing back
7:50		pulling goods out of oven	8:00		rolling dough crossing
8:10		mixing chocolate	8:20		sending her off to school
8:30		boyfriend on phone	8:40		customer opens door

	OBSERVER #1			OBSERVER #2	
8:50		how can I help you? Ugh	9:00		in a second. OK, thanks.
9:10		sorry, we don't deliver	9:20		that'll be $5.25. . .
9:30		I got 3¢. . .	9:40		ten donuts instead of 12?
9:50		. . .thanks a lot	10:00		for us. (ringing register)
10:10		have to pay payroll tax	10:20		and I have to pay a babysitter
10:30		you can get back	10:40		take another offer
10:50		what are you laughing for	11:00		well it's Me!
11:10		get to college. . .(shot of Dad's face)	11:20		I know Pam
11:30		I gotta go. Ya	11:40		than projected. Oh, that's
11:50		We could do?	12:00		. . .We can't afford both
12:10		eventually pay for itself	12:20		Wait for awhile. . .
12:30		a minute. . . (car expenses shot)	12:40		. . .(Early Risin' Bakery shot)
12:50		Thanks dad. . .	13:00		I will dad, I will
13:10		Bye, bye. . .(Do Taxes Influence Behavior bumper sticker)	13:20		
13:30			13:40		
13:50			14:00		
14:10			14:20		
14:30			14:40		
14:50			15:00		

APPENDIX B

Program #2

Student Questionnaire

32 15 33 20
Grade: (circle) 9 10 11 12

Sex: Male 47 Female 53

City or Town _____

School KY = 40 MD = 41 DC = 18

1. Do you think this program was interesting?
   22 yes, very interesting
   63 yes, sort of interesting
   13 no, not very interesting
   3 no, not at all interesting

2. Do you think the story was believable?
   45 yes, very believable
   46 yes, sort of believable
   7 no, not very believable
   1 no, not at all believable

3. Do you think Roxanne (the girl in the program) seemed like a realistic teenager?
   36 yes, very realistic
   43 yes, sort of realistic
   17 no, not very realistic
   4 no, not at all realistic

4. Do you think Mr. Whittaker (Roxanne's father) seemed like a realistic parent?
   38 yes, very realistic
   43 yes, sort of realistic
   17 no, not very realistic
   2 no, not at all realistic

5. Circle the word(s) in each pair that best describes Roxanne during most of the program.

11	not likeable	OR	likeable 89
23	unbelievable	OR	believable 76
47	insecure	OR	secure 52
9	dumb	OR	smart 90

6. Circle the word in each pair that best describes Carl Whittaker during most of the program.

7		93
not likeable	OR	likeable
21		79
unbelievable	OR	believable
21		79
insecure	OR	secure
15		85
incompetent	OR	competent
7		93
dumb	OR	smart

7. Do you think most people who are opening a new business are as concerned about taxes as Mr. Whittaker was?

36 yes, definitely
40 yes, probably
21 no, probably not
1 no, definitely not

8. Do you think the way Roxanne and her father interacted was typical of the way most teens interact with their fathers?

12 yes, very typical
36 yes, sort of typical
41 no, not very typical
9 no, not at all typical

9. Do you think taxes really affect the way people behave?

40 yes, definitely
38 yes, probably
17 no, probably not
5 no, definitely not

10. True or false: Taxes on particular products discourage certain activities, since people can avoid the taxes by not buying or selling the products that are taxed.

53 True
21 False
25 Don't know

11. True or false: Tax exemptions and deductions encourage certain activities since people can decide to engage more in these activities to take advantage of the tax savings.

72 True
7 False
20 Don't know

12. True or false: Tax deductions usually reduce the amount of money an individual or business must pay for taxes.

77 True
9 False
14 Don't know

13. Which usually reduces the amount of tax owed by an individual or business the most, a tax credit or tax deduction?
59 tax credit
26 tax deduction
15 Don't know

14. What do you think the main message of this program was?
10 Opening a new business is very complicated
57 Taxes influence people's behavior
24 Businesses usually benefit the most from tax deductions and tax credits
7 Everyone tries to avoid paying taxes

15. Did you learn anything new from this program?
19 yes, a lot
62 yes, a little
13 no, not very much
4 no, nothing at all

APPENDIX C

Tax Whys: Understanding Taxes

Student Discussion Questions

1. What's your overall reaction to this program?
   Probes: Did you like it? Why or why not?
2. What did you think about Roxanne, the girl in the program?
   Probes: Was she a realistic teen? Why or why not?
3. What did you think about Mr. Whittaker, Roxanne's father?
   Probes: Was he a realistic parent? Why or why not?
4. What did you think about the way Roxanne and her father interacted?
   Probes: Did they seem like a realistic father/daughter? Why or why not?
5. Did taxes influence any decisions that were made in the program?
   Probes: Which decisions? How did taxes affect the decision?
6. Was the bakery a realistic bakery?
   Probe: Why or why not?
7. Do you think we should make any changes in the program?
   Probe: Why?
8. Do you have any other comments about the program?

APPENDIX D

All numbers in percent

N = 12

Economics of Taxation
(Working Title)
Program #2

Teacher Questionnaire

1. Following is a list of objectives designed for this program. Using the following key, rate each objective according to its visibility in the program. Place the letter corresponding to your rating next to each objective.

A = highly visible
B = only slightly visible
C = not visible at all in the program
D = do not understand the statement's purpose

A = 36
B = 64
_____ Objective #1: Students will explain how taxes on particular goods and services discourage certain activities, since people can avoid the direct cost of these taxes by not buying or selling the goods or services that are taxed.

A = 64
B = 36
_____ Objective #2: Students will explain how exemptions and deductions from general taxes encourage certain activities since people can decide to engage more in the activities that are exempted.

2. Using the following scale, please indicate to what extent you presently cover the above concepts in your classes. Circle your response.

	Not at all				In depth
Objective 1	1	2	3	4	5
	9	18	36	36	
Objective 2	1	2	3	4	5
	27	18	36	18	

3. Does the topic of this lesson (taxes influence people's behavior) fit within your curriculum area?

54 yes, definitely within my area
36 yes, but only marginally within my area
10 no, not really in my area
_____ no, definitely not in my area
If no, what curriculum area(s) do you think this program fits?

4. Did you like the program?

27 yes, a lot
63 yes, a little
10 no, not very much
_____ no, not at all

5. The concepts presented in this program would be understood by:

27 all of my students
36 most of my students
27 half of my students
10 less than half my students

6. For your students to understand the concepts presented in the program, how much follow-up on your part would be necessary?

90 a great deal
10 very little
____ none at all

7. On which of the following pre-program activities would you concentrate most of your preparation time?

18 learning the concepts
18 reviewing the concepts
10 planning specific implementation activities
____ arranging the equipment
____ other

54% of teachers would use more than one

8. Which aspect of the program would you most likely follow-up with your students?

9. Do you think some of the program's key terms (tax deductions, tax credits, exemptions) should be defined in the teacher's guide?

82 definitely 9 probably 9 probably not ____ definitely not

10. Would you use this program with your classes?

27 definitely 46 probably 27 probably not ____ definitely not

11. Have you used any materials from the Internal Revenue Service package, "Understanding Taxes"?

54 yes 45 no

Teacher Questionnaire Responses

Question 3

1. Civics/Issues.

2. We have "issues classes" in which this would fit well. Seniors of '88 will be required to take class.

Question 8

1. Student participation--girls and boys who are entrepreneurs, etc.

2. Types of taxes pointed out ways to decrease paying taxes.

3. Work concerning the development of American business of the 19th century, general income tax preparation.

4. Understanding taxes, exemptions, credits, etc.

5. Tax deductions.

6. Other examples of starting businesses, this would include student investigation of the market for certain businesses. Perhaps a game strategy which would require the student to set up a business.

7. Tax credits, different from deductions.

8. Why? Terms such as "tax credits"

9. How taxes affect their individual life styles and behavior? At what point will they (students) really become concerned with the implications of taxation?